

# The research paper

Communicating research findings to  
the broader community

# Writing a research paper: Purpose

- I. To add to scientific knowledge
  - A. as it relates to prior knowledge
  - B. as it provides new knowledge
- II. To convey information clearly and concisely
  - A. clarity of presentation
  - B. conciseness of presentation

# Types of articles and representative journals

## I. Theory development

A. Psychological Review

B. Psychological Inquiry

## II. Reviews of prior findings

A. Psychological Bulletin

B. American Psychologist

C. Current Directions in Psychological Science

## III. “Archival” data

A. peer reviewed studies that are worth publishing

B. because of new findings or methods

# Types of Journals

## I. Broad band

### A. Interest to all fields:

1. Science
2. Nature

### B. Interest to all Psychologists

1. Journal of Experimental Psychology: General
2. Psychological Science

## II. Interest to a narrow field

### A. Journal of Personality and Social Psychology

### B. Journal of Abnormal Psychology

### C. Cognitive Psychology

### D. Developmental Psychology

# Types of Journals (continued)

## I. Methodology

A. Psychological Methods

B. Psychometrika

C. Psychological Assessment

D. Applied Psychological Measurement

E. Multivariate Behavioral Research

# Conventional Styles

## I. Science/Psychological Science/Nature

A. emphasis upon problem and conclusions

B. methods and detailed results last

## II. APA journals

A. APA manual of style

B. Intro - Method - Results - Conclusions

## III. Chapters

A. Stand alone content - integrative structure

## IV. Books

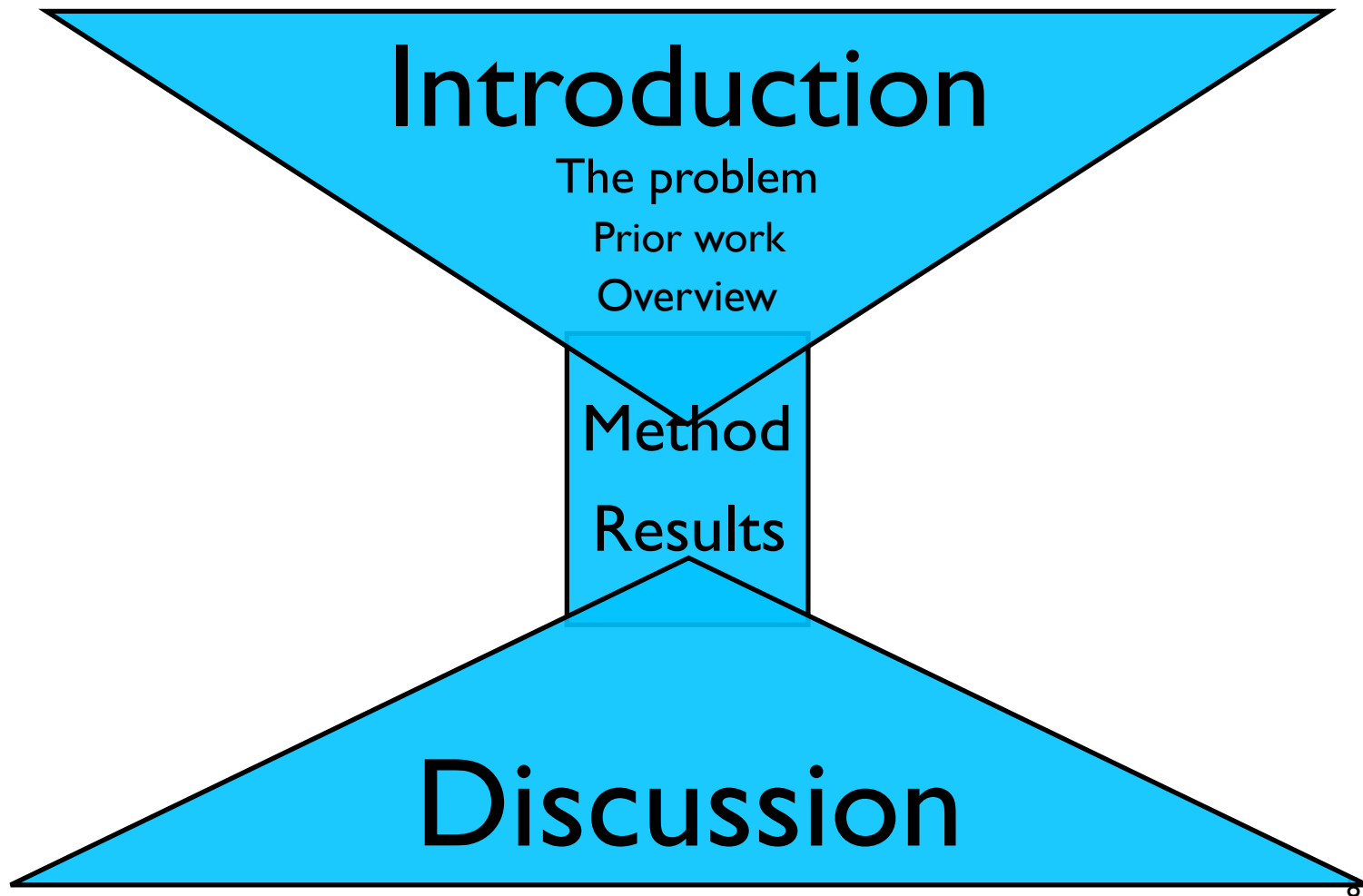
A. Edited chapters

B. Monograph

# Sections of an APA article

1. Title page
2. Abstract
3. Introduction
4. Method
5. Results
6. Discussion and Conclusion
7. References
8. Tables
9. Figure Captions
10. Figures

# Structure of a paper an hourglass



# Title Page

- (a) title
- (b) author(s)
- (c) affiliation
- (d) running head

# Abstract

- In less than 100-150 words, tell:
  - What was the problem
  - What was done
    - with how many participants
    - gender of participants
  - What was found
  - What does it mean
- (Write the abstract last)

# Introduction

- I. Theoretical questions being examined
  - A. Why is it interesting?
  - B. Why is it important
- II. Review of previous work
  - A. What has already been found?
  - B. What unsolved problems are raised by the prior research?
  - C. Are there methodological flaws in previous research that need to be addressed?
- III. Overview of study
  - A. Brief paragraph describing basic design
  - B. Variables of interest

# Methods/Procedures

I. Enough information to allow someone to replicate the study if they chose to do so

A. Subjects/participants

1. who were they
2. how were they chosen
3. what special characteristics do they have

B. Apparatus

1. any special equipment or forms

C. Procedure

1. what was said by the experimenter
2. what was asked of the participant

# Results

- I. Any finding worth discussing is introduced here
  - A. say it in words
    1. (doing X led to an increase in Y)
  - B. say it in numbers  
(mean Y for low X = , mean Y for high X =
  - C. say it in statistics ( $F_{a,b} = xx.xx$ ,  $p < .0y$ )
  - D. references are made to tables and figures  
(insert table X about here)  
actual tables and figures appear later in manuscript

# Discussion and Conclusion

## I. What do the results mean

A. In a manner that a generalist can understand

B. In a manner that a specialist will appreciate

## II. How do the results relate to the original hypotheses?

A. Why are they different? (If they are)

## III. Implications for further study

A. What should be the next set of studies to be conducted?

## IV. Final paragraph giving “take home message”

# Final sections

## References

(a) literature cited

refer to articles actually read by you

(if important but not read by you, cite as “as cited by ...”)

Tables (see Leary, Plonsky)

Figure Captions ( one page for captions for all of the figures)

Figures

(do not include figure captions on these figures)

# Additional comments

## Stylistic considerations

general style of writing

specific requirements

partially meant for the ease of editing

margins and spacing

levels of headings

running heads

# General style considerations

## Overall

Write for the intelligent but uninformed reader

Remember what is important in each paragraph and each section.

Topic sentences should be able to stand by themselves

## Minor comments

complete sentences

no unnecessary words

Proofread -- spelling and punctuation!

remember: tense

data are plural!

# Guides to writing an APA paper

- APA manual of style - The official reference
- Leary (Chapter 15) detailed example
- Plonsky “cheat sheet” to the APA paper
  - <http://www.uwsp.edu/psych/apa4b.htm>
- Also possible to use sophisticated typesetting language: LaTeX with the apa.cls style sheet
  - see <http://personality-project.org/revelle/syllabi/205/apa.style.html>

# LaTeX: a brief overview- optional

- Author's emphasis should be upon content not format
  - let the author write
  - let the computer do the formatting
- TeX originally developed by Donald Knuth, LaTeX by Leslie Lamport as add on to TeX
- Available as free software from [latex-project.org](http://latex-project.org)

# LaTeX is a markup language

- LaTeX and HTML (for web) are markup languages and are not WYSIWYG
- Initially harder to use than WYSIWYG programs such as Word or OpenOffice
- Allow user great control over what the document will look like (if desired) or can do complex formatting without much thought.

# LaTeX structure

- Commands are preceded by `\`
  - and sometimes followed by `{}`
  - `\section{This is a section heading}`
  - `%` comments are preceded by `%` and are ignored
- Structure of a document is
  - Preamble (what packages to include, who you are, what type of output you desire)
  - Content (perhaps broken into sections, perhaps including tables and figures)
  - End materials

# Structure of Latex Document: example template

```
\documentclass[man]{apa}%can be jou (for journal), man (manuscript) or doc (document)
\usepackage{url} %this allows us to cite URLs in the text
\usepackage{graphicx} %allows for graphic to float when doing jou or doc style
\usepackage{amssymb} %use formatting tools for math symbols
\title{A basic apa style paper}
\author{Your Name}
\affiliation{Department of Psychology \\\ Northwestern University}
%\date{} %Activate to display a given date or no date
\abstract{Some 100 clever words, but in complete sentences.}
\begin{document}
\maketitle
%\section{}
An introduction should be interesting and could include a reference \cite{rev:ea07}
\section{Methods}
Allow someone to do the study again
\section{Results}
What did you find -- say it in words, numbers and then stats \\\
a Table could go here
\section{Discussion}
What does it mean? Make it interesting. Perhaps point out how the literature supports this result \cite
{killeen}
\bibliography{examplebib} %allows for bibliographic material to be automatically formatted
\end{document}
```

# Latex: manuscript format

A basic apa style paper 1

Running head: A BASIC APA STYLE PAPER

A basic apa style paper

Your Name

Department of Psychology

Northwestern University

# Latex: Manuscript p 2

A basic apa style paper 2

## Abstract

Some 100 clever words, but in complete sentences.

# Latex: APA manuscript p 3

A basic apa style paper 3

## A basic apa style paper

An introduction should be interesting and could include a reference (Revelle, 2007).

### Methods

Allow someone to do the study again.

### Results

What did you find – say it in words, numbers and then stats.

a Table could go here.

### Discussion

What does it mean? Make it interesting. Perhaps point out how the literature supports this result (Killeen, 2005).

# LaTeX: apa page 4

A basic apa style paper 4

## References

Killeen, P. (2005). An alternative to null-hypothesis significance tests. *Psychological*

*Science*, *16*, 345-353.

Revelle, W. (2007). Experimental approaches to the study of personality. In R. Robins,

R. C. Fraley, & R. F. Krueger (Eds.), *Handbook of research methods in personality psychology*. New York: Guilford.

# Latex: typeset as journal

## A basic apa style paper

Your Name  
Department of Psychology  
Northwestern University

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### References

- Killeen, P. (2005). An alternative to null-hypothesis significance tests. *Psychological Science, 16*, 345-353.
- Revelle, W. (2007). Experimental approaches to the study of personality. In R. Robins, R. C. Fraley, & R. F. Krueger (Eds.), *Handbook of research methods in personality psychology*. New York: Guilford.